

US-PAT-NO: 6494865

DOCUMENT-IDENTIFIER: US 6494865 B1

TITLE: Intradermal delivery device
including a needle assembly

DATE-ISSUED: December 17, 2002

INVENTOR-INFORMATION:

NAME	CITY
STATE ZIP CODE COUNTRY	
Alchas; Paul G.	Wayne NJ
N/A N/A	

INT-CL: [07] A61M005/32

US-CL-ISSUED: 604/192

US-CL-CURRENT: 604/192

FIELD-OF-SEARCH: 604/46; 604/47 ; 604/117 ; 604/192 ;
604/198 ; 604/171
; 604/197

REF-CITED:

PAT-NO	U.S. PATENT DOCUMENTS ISSUE-DATE	PATENTEE-NAME
	US-CL	
1934046	November 1933	Demarchi
128/215	N/A	N/A
2876770	March 1959	White
128/215	N/A	N/A
3400715	September 1968	Pederson
128/215	N/A	N/A
4060073	November 1977	Collica et al.
128/1.1	N/A	N/A
4270537	June 1981	Romaine
128/218	N/A	N/A
4373526	February 1983	Kling
604/117	N/A	N/A
4481001	November 1984	Graham et al.

	434/267	N/A	N/A
4583978		April 1986	Porat et al.
	604/208	N/A	N/A
4596556		June 1986	Morrow et al.
	604/70	N/A	N/A
4718463		January 1988	Jurgens, Jr. et al.
	141/11	N/A	N/A
4769003		September 1988	Stamler
	604/39	N/A	N/A
4790824		December 1988	Morrow et al.
	604/143	N/A	N/A
4883473		November 1989	Thomas
	604/217	N/A	N/A
4883573		November 1989	Thomas
	N/A	N/A	N/A
4886499		December 1989	Cirelli et al.
	604/131	N/A	N/A
4898588		February 1990	Roberts
	604/187	N/A	N/A
4940460		July 1990	Casey et al.
	604/143	N/A	N/A
4941880		July 1990	Burns
	604/143	N/A	N/A
4955871		September 1990	Thomas
	N/A	N/A	N/A
4978344		December 1990	Dombrowski et al.
	604/198	N/A	N/A
5015235		May 1991	Crossman
	604/117	N/A	N/A
5064413		November 1991	McKinnon et al.
	604/70	N/A	N/A
5071353		December 1991	van der Wal
	434/262	N/A	N/A
5141496		August 1992	Dalto et al.
	604/117	N/A	N/A
5190521		March 1993	Hubbard et al.
	604/51	N/A	N/A
5207983		May 1993	Liebert et al.
	422/25	N/A	N/A
5222949		June 1993	Kaldany
	N/A	N/A	N/A
5256154		October 1993	Liebert et al.
	604/199	N/A	N/A
5312335		May 1994	McKinnon et al.
	604/72	N/A	N/A
5328483		July 1994	Jacoby
	604/185	N/A	N/A
5331954		July 1994	Rex et al.

	128/200.22	N/A	N/A
5334144	August 1994		Alchas et al.
	604/68	N/A	N/A
5339163	August 1994		Homma et al.
	348/229	N/A	N/A
5368578	November 1994		Covington et al.
	604/232	N/A	N/A
5373684	December 1994		Vacca
	53/425	N/A	N/A
5383851	January 1995		McKinnon, Jr. et al.
	604/68	N/A	N/A
5417662	May 1995		Hjerman et al.
	604/117	N/A	N/A
5431155	July 1995		Marelli
	128/200.14	N/A	N/A
5437647	August 1995		Firth et al.
	604/110	N/A	N/A
5466220	November 1995		Brenneman
	604/87	N/A	N/A
5480381	January 1996		Weston
	604/68	N/A	N/A
5496286	March 1996		Stiehl et al.
	604/232	N/A	N/A
5503627	April 1996		McKinnon et al.
	604/72	N/A	N/A
5505694	April 1996		Hubbard et al.
	604/51	N/A	N/A
5514107	May 1996		Haber et al.
	604/197	N/A	N/A
5519984	May 1996		Beussink et al.
	53/489	N/A	N/A
5520639	May 1996		Peterson et al.
	604/68	N/A	N/A
5527288	June 1996		Gross et al.
	604/140	N/A	N/A
5531255	July 1996		Vacca
	141/285	N/A	N/A
5569089	October 1996		Parsons
	604/68	N/A	N/A
5573042	November 1996		De Haen
	141/2	N/A	N/A
5578014	November 1996		Erez et al.
	604/192	N/A	N/A
5582598	December 1996		Chanoch
	604/208	N/A	N/A
5597530	January 1997		Smith et al.
	422/28	N/A	N/A
5599302	February 1997		Lilley et al.

	604/68	N/A	N/A
5620425	April 1997		Heffernan et al.
	604/281	N/A	N/A
5649912	July 1997		Peterson
	604/187	N/A	N/A
5665071	September 1997		Wyrick
	604/134	N/A	N/A
5702362	December 1997		Herold et al.
	604/58	N/A	N/A
5704911	January 1998		Parsons
	604/72	N/A	N/A
5779677	July 1998		Frezza
	604/134	N/A	N/A
5873856	February 1999		Hjertman et al.
	604/117	N/A	N/A
5879327	March 1999		Moreau De Farges et al.
	604/68	N/A	N/A
5891085	April 1999		Lilley et al.
	604/68	N/A	N/A
5893397	April 1999		Peterson et al.
	141/27	N/A	N/A
5921963	July 1999		Erez et al.
	604/192	N/A	N/A
5957897	September 1999		Jeffrey
	604/223	N/A	N/A
5961495	October 1999		Walters et al.
	604/208	N/A	N/A
5993412	November 1999		Deily et al.
	604/68	N/A	N/A
6001089	December 1999		Burroughs et al.
	604/506	N/A	N/A
6004299	December 1999		Arai et al.
	604/218	N/A	N/A
6036675	March 2000		Thorne et al.
	604/232	N/A	N/A
6053893	April 2000		Bucher
	604/131	N/A	N/A
6083197	July 2000		Umbaugh
	604/68	N/A	N/A
6090077	July 2000		Shaw
	604/195	N/A	N/A
6090080	July 2000		Jost et al.
	604/207	N/A	N/A
6090082	July 2000		King et al.
	604/234	N/A	N/A
6093170	July 2000		Hsu et al.
	604/110	N/A	N/A
6112743	September 2000		Denton

	128/200.14	N/A	N/A
6200291	March 2001	Di Pietro	
604/117	N/A	N/A	

FOREIGN-PAT-NO	FOREIGN PATENT	DOCUMENTS
	PUBN-DATE	COUNTRY
US-CL		
41 27 887	January 1993	DE
0279583	October 1993	EP
0 904 790	March 1999	EP
2 612 401	September 1988	FR
2 206 794	January 1989	GB
2000-37456	February 2000	JP
WO 94/23777	October 1994	WO
WO 95/01198	January 1995	WO
WO9713537	April 1997	WO
WO9737705	October 1997	WO
WO 99/27986	June 1999	WO
WO 99/34850	July 1999	WO

OTHER PUBLICATIONS

Article: Dermal Immune System by Brian J. Nickoloff,
MD, PhD.

Article: Trials of Intradermal Hepatitis B Vaccines in
Gambian Children by
Whittle, Lamb, Ryder.

Article: Injection of Technique Intradermal.

Article: The Dendritic Cell System and Its Role in
Immunogenicity by Ralph
Steinman.

Article: Intradermal Gene Immunization: The Possible
Role of DNA Uptake in
the Induction of Cellular Immunity to Viruses by: Eyal Raz
et al.

Article: Clinical Do's & Don'ts--Giving Intradermal
Injections by: Edwina
McConnell, RN, PhD.

Article: Monographs of the physiological society No.
12: Substances
producing pain and itch by C.A. Keele And D. Armstrong Pub:
The Williams &

Wilkins Company (1964).

Purified Influenza Vaccine: Clinical and Serologic Responses to Varying Doses and Different Routes of Immunization, by C.A. Philips, B.R. Forsyth, W.A. Christmas, D.W. Gump, E.B. Whorton, I. Rogers, and A. Rudin, from the Department of Medicine and Community Medicine, University of Vermont College of Medicine, Burlington, Vermont.

Polyvalent Influenza Vaccine: Comparison of Jet Injection with Intradermal and Subcutaneous Syringe Methods of Administration, authored by Mervin L. Clark, Herbert Reinhardt, M. Clinton Miller, III and Ray Wilson, Oklahoma City, Oklahoma.

Experimental Comparison of Intradermal and Subcutaneous Vaccination with Influenza Vaccine, from the American Journal of Medical Technology, vol. 31, Nov.-Dec. 1965, No. 6.

Intradermal Influenza Immunization, Experience with Hong Kong Vaccine, from the American Review of Respiratory Disease, vol. 103, 1971.

Efficacy of Adsorbed Trivalent Split Influenza Vaccine Administered by Intradermal Route, by I. Th. Niculescu, Eugenia Zilisteanu, V. Alexandrescu, Mihaela Matepiuc, Ligia Cretescu, N. Ionescu, G. Molnar, R. Racasan and Adina Mogos, received for publication Dec. 4, 1980, from Arch. Roum. Path. Exp. Microbiol., T. 40, No. 1, pp. 67-70, Janvier-Mars, 1981.

Efficacy of Intradermally Administered A2 Hong Kong Vaccine, from Jama, from Jama, Jul. 6, 1970. vol. 213, No. 1.

Comparison of Responses to Influenza, A-New Jersey/76-A/Victoria/75 Virus Vaccine Administered Intradermally or Subcutaneously to Adults with Chronic

Respiratory Disease, authored by F. Alexander Herbert, R. P. Bryce Larke, and Edythe L. Markstad, from the Journal of Infectious Diseases, vol. 10, No. 2, Aug. 1979.

A Comparison of the Intradermal and Subcutaneous Routes of Influenza Vaccination with A/New Jersey/76 (Swine Flu) and A/Victoria/75: Report of a Study and Review of the Literature, by William Halperin, MD, MPH, William I. Weiss, MD, Ronald Altman, MD, MHP, Michael A. Diamond, MD, Kenneth J. Black, BA, Alfred W. Iaci, BBA, MS, Henry C. Black, DVM and Martin Goldfield, MD, from the ALPHA Dec. 1979, vol. 69, No. 12.

Effect of Dosage and Route of Inoculation Upon Antigenicity of Inactivated Influenza Virus Vaccine (Hong King Strain) in Man, from Bull. Org. mond. Sante Bull. Wld Hlth Org. 1969, 41, 507-516.

Comparative Analysis of Six European Influenza Vaccines, from Eur. J. Clin. Microbiol. Infect. Dis. 1996, 15:121-127.

Morphological and Biochemical Characteristics of Influenza Vaccines Commercially Available in the United Kingdom, by F. Renfry and A. Watts, from Vaccine 1994, vol. 12, No.8.

Influenza Immunization Policies and Practices in Japan, from the Journal of Infectious Diseases, vol. 141, No. 2, Feb. 1980.

Clinical Immunogenicity and Tolerance Studies of Liquid Vaccines Delivered by Jet-Injector and a New Single-Use Cartridge (Imule.RTM.Comparison) with Standard Syringe Injection, authored by Isabelle Parent du Chatelet, Jean Lang, Martin Schlumberger, Emmanuel Vidor, Georges Soula, Alain Gene, Steven M. Standaert, Pierre Saliou and Imule.RTM. Investigators Group, Vaccine 1997, vol.

15, No. 4.

Abstract: Does a Needleless Injection System Reduce Anxiety in Children Receiving Intramuscular Injections?, by Polillio AM, Kiley J, from the Pediatric Primary Care Clinic, Boston City Hospital, MA, USA. Pediatr. Nurs. 1997, Jan.-Feb.; 23(1): 46-9.

Abstract: Intradermal Administration of Viral Vaccines, by Nagafuchi S., Kashiwagi S, Imayama S, Hayashij, Niho Y, from Rev. Med. Virol. 1998 Apr.; 8(2):97-111.

Abstract: Letter: Intradermal Influenza Vaccination, by Payler DK, Skirrow MB, Br Med J 1974 Jun. 29; 2(921);727.

Intradermal Influenza Vaccination: British Medical Journal, Jun. 29, 1974.

Smith Kline Beecham Meeting Agenda.

ART-UNIT: 3763

PRIMARY-EXAMINER: Mendez; Mannel